Phonological systems with schwa in their inventory usually display high variation. This talk departs from a comparison of Moroccan Arabic and French schwa and takes into account Moroccan learners' pronunciations of French items. Moroccan schwa is an epenthetic element which only appears in closed syllables and which is often accented. On the contrary, French schwa is best represented by three phonological statuses, as either stable, floating or epenthetic (see for example Dell 1973, Durand/Eychenne 2004, Tranel 1987). It appears only in open syllables and is never accented.

Further differences arise with regard to phonetic quality. While Moroccan schwa is subject to coarticulation and therefore acoustically variable, French schwa is close to the front rounded vowels /œ/ and /ø/ (Fougeron et al. 2007, Maas 2001).

Regarding these discrepancies, interactions of the two systems can be supposed in Moroccan learner speech. An experiment was conducted in order to capture the phonetic identity of schwa. The corpus comprises productions of ten speakers at an early stage of French acquisition. The data have been gathered principally from two tasks: the repetition of phrases and the description of a map. It was thus possible to elicit schwa in different phonological contexts. The same experiment was repeated with a control group consisting of ten native French speakers. The subsequent questions concern the identity of the vowel: Does schwa have its own characteristics? Can it be treated as a distinct unit?

To determine the acoustic identity of Moroccan learner schwa, an analysis examines formant values (F1, F2) as well as duration. As indicated in figure 1, learner schwa displays a broader formant spectrum. Also when looked at in more detail, dispersion in learner values is much higher than in French schwa. An ANOVA shows that the place of articulation of the preceding and following consonants has a highly significant influence on F2 (p < 0,001). However, comparable French data yield the same results, so that coarticulation alone cannot be the responsible factor for variability. As to duration, Moroccan learner schwa is significantly longer than French schwa. Additionally, syllable structure conditions such as the position of the schwa syllable in the word (initial, non-initial, clitic), the number of preceding consonants and the position of the syllable boundary (.C.ǝ, .C.C.ǝ, .C.C.ǝ) are tested for potential effects. So far, a significant influence of the position on duration has been detected for French schwa (p < 0,05), but not for learner schwa. The current analysis focuses on a separate investigation of the different schwa types, the hypothesis being that more extreme F2 values and a longer duration are to be found in the stable type (e.g. in words like prenez or squelette), whereas floating schwa is supposed to be more central and of shorter duration. Moreover, F3 is tested for any differences in lip rounding. Final results will be available in June.

The theoretical framework of Optimality Theory provides an adequate way to model the phonological conditions of French and Moroccan Arabic as well as the results of the analyses. The identity of schwa in Moroccan learner speech should thus be explainable in terms of an intermediate stage between the language specific hierarchies. In the end, this will hopefully allow for conclusions on schwa in phonological theory.
References